

Oroville Facilities Relicensing  
FERC Project No. 2100

Study Plan Glossary Definitions

acre-foot	The amount of water required to cover one acre to a depth of one foot. An acre-foot equals 326,851 gallons or 43,560 cubic feet. This volume measurement is used to describe a quantity of storage in a reservoir.
affecting	Will or may have an effect on
afterbay	A reservoir located immediately downstream from a powerhouse, sometimes used to re-regulate flows to the river or stream.
aggradation	The process of building up a surface by deposition.
Allocation	Amount of water guaranteed to a jurisdiction under an agreement or court order.
alluvial	Pertaining to or composed of alluvium, or deposited by a stream or running water.
alluvium	A general term for detrital deposits made by streams on riverbeds, floodplains, and alluvial fans. The term applies to stream deposits of recent time.
Alternative Licensing Procedure	General term given to a number of nontraditional approaches available to a licensee when applying to the Federal Energy Regulatory Commission to relicense a hydropower facility as described in Commission Order No. 596. ALP's may include collaborative teams, settlements, alternative dispute resolution and mediation while using a hybrid process, traditional licensing process, the Applicant Prepared Environmental Assessment process, or the use of third-party contracting. The ALP process empowers the licensee and stakeholders to collaboratively design the consultation process for the relicensing effort. The ALP process allows the licensee and stakeholders to jointly propose license terms and conditions often based on a negotiated Settlement Agreement that is submitted to FERC with the license application. The ALP also combines the pre-filing consultation process the some of FERC's National Environmental Policy Act requirements. FERC regulations allow for an integration of pre-filing consultations with the environmental analysis, allowing the licensee to prepare an Applicant Prepared Environmental Assessment to meet the requirements of NEPA. The draft EPEA is filed with FERC along with the license application. The ALP process may include the development of Settlement Agreements between relicensing participants. A Settlement Agreement may detail a preferred project mitigation strategy that has been agreed upon by relicensing participants. Ideally, any Settlement Agreement would be included in the APEA and

would be used by FERC as a basis for the new license terms and conditions. The ALP process encourages greater public involvement and provides an opportunity for the licensee and stakeholders to tailor the licensing process to address specific issues and streamline procedural compliance with multiple federal laws that are involved in the relicensing process. Atmospheres of cooperation, trust, and support for the alternative approach among relicensing participants is essential to the success of this relicensing effort.

anadromous	Migrating up rivers from the sea to breed in freshwater, such as salmon and steelhead.
ancillary services	Services other than scheduled energy, which are required to maintain system reliability and meet certain operating criteria. Such services include spinning, non-spinning, replacement reserves, regulation, voltage control, and black start capability.
aquatic plant	Plant that grows in water either floating on the surface, growing up from the bottom of the body of water or growing under the surface of the water.
aquifer	A body of rock or soil that is sufficiently permeable to conduct groundwater and to yield economically significant quantities of water to wells and springs.
Area of Potential Effects	When evaluating potential cultural resources impacts (especially in the context of the National Historic Preservation Act), the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. The APE sets the geographic scope for the cultural resources studies. For study purposes, the APE may be different from the FERC boundary.
armored riverbed	A riverbed from which easily removed sediment has been eroded leaving a surface of cobbles or boulders (may be artificially made).
automatic generation control	The ability to control the megawatt output of a given powerhouse from remote site, such as the California Independent System Operator, used to support California's electric regulation system.
average streamflow	The rate at which water passes a given point in a stream based on an annual average, usually expressed in cubic feet per second.
bank	The rising ground bordering a stream or river. Banks are identified as right or left as viewed facing downstream.
bankfull stage	The elevation of the water surface of a stream flowing at channel capacity. Discharge at this stage is called bankfull discharge.

bank storage	Water absorbed and stored in the soil cover of the bed and banks of a watercourse which is returned to the watercourse in whole or in part as the water level falls.
base load	The minimum electrical system load over a given period of time.
base river flow	Also referred to as “minimum flow.” The minimum river flow required to sustain aquatic life. Often prescribed in FERC license articles.
basin	A land area having a common outlet for its surface water runoff.
Basin Plan	Regional Water Quality Control Board’s Central Valley Regional Water Quality Control Plan (CVRWQCB 1998) identifies beneficial uses, water quality objectives, numeric and narrative standards for the basin that includes the Feather River watershed.
Beneficial Use	Traditionally, the use of water for such benefits as agriculture, mining, power development, and domestic water supply.
benthic region	The bottom of a body of water. This region supports the benthos, a type of life that not only lives upon, but also contributes to the character of the bottom.
benthos	The plant and animal life whose habitat is the bottom of a sea, lake, or river.
bioaccumulation	The accumulation or concentration of compounds in higher concentrations in plants and animals as you move up the food chain.
biome	The entire community of living organisms in a single major ecological region.
biota	All the species of plants and animals occurring within a certain area.
blackout	The disconnection of the source of electricity from all the electrical loads in a certain geographical area brought about by an emergency forced outage or other fault in the generation, transmission, or distribution system serving the area.
breach	A break or opening in a dam or levee.
brownout	The partial reduction of electrical voltages. A brownout results in lights dimming and motor-driven devices slowing down.
bus	A conductor or group of conductors that serve as a common connection for two or more circuits. In power plants, buswork comprises the three rigid single-phase connectors that interconnect the generator and the step-up transformer(s).

bypass reach	That section of a river from which water is removed to generate hydropower. Water is often diverted from the river at the dam, transported through channels or penstocks downstream, and released back in the river at the powerhouse. Bypassed reaches can be as short as a few hundred feet to as long as several miles.
bypass system	Structure at a dam that provides a route for fish to move through or around the dam without going through the turbines.
calibrate	To check, standardize or adjust systematically the graduations of a measuring instrument.
capacity	<p>The production level for which an electrical generating unit or other electrical apparatus is rated, either by the user or manufacturer. (FERC) Capacity is also used synonymously with capability.</p> <ul style="list-style-type: none"> <li>• Dependable capacity - the load-carrying ability of a station or system under adverse conditions for a specified time period.</li> <li>• Installed capacity - the total manufacturer rated capacities of such kinds of equipment as turbines, generators, condensers, transformers and other system components.</li> <li>• Peaking capacity - the maximum sustainable capacity of generating equipment intended for operation only during the hours of highest daily, weekly, or seasonal loads.</li> <li>• Reserve generating capacity - extra generating capacity available to meet peak or abnormally high demands for power and to generate power during scheduled or unscheduled outages.</li> </ul>
capillary fringe	The lower subdivision of the zone of aeration, immediately above the water table, in which the interstices are filled with water under pressure less than that of the atmosphere, being continuous with the water below the water table but held above it by surface tension.
channel	An open conduit either naturally or artificially created which periodically or continuously contains moving water; or forms a connecting link between two bodies of water. River, creek, run, anabranch, and tributary are some of the terms used to describe natural channels. Canal and floodway are two terms used to describe artificial channels.
circuit breaker	Any switching device that is capable of closing or interrupting an electrical circuit.
climatic year	The 12-month period used in collection of precipitation data. Climatic years begin July 1 and end the following June 30, and are designated by the calendar year in which the water year ends.
Communications Protocol	Provides a framework for coordination and dialogue among all parties involved in the pre-filing consultation and environmental review process for the Projects pursuant to the alternative administrative process authorized by FERC.

confluence	The point where two streams meet.
consumptive use	Non-reusable withdrawal of water where the water is evaporated, transpired by plants, incorporated into products or crops, or consumed by humans or animals.
coordinated operation	Generally, the operation of two or more interconnected systems to achieve greater reliability and economy. As applied to hydropower resources, the operation of a group of hydropower plants to obtain optimal power benefits with due consideration to all other uses.
coordination	The practice by which two or more interconnected electric power systems augment the reliability of bulk electric power supply by establishing planning and operating standards; by exchanging pertinent information regarding additions, retirements, and modifications to the bulk electric power supply system; and by joint review of these changes to assure that they meet the predetermined standards.
crest	(1) The highest stage or level of a flood wave as it passes a point. (2) The top of a dam, dike, spillway, levee or weir, to which water must rise before passing over the structure.
cubic feet per section	A measurement of water flow representing one cubic foot of water (7.48 gallons) moving past a given point in one second. One cfs equals about two acre-feet per day.
cumulative impact	The impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (CEQ regulations 40 CFR 1508.7).
cycling	Power plant operation to meet the intermediate portion of the load (9 to 14 hours per day).
dam	A structure for impounding water.
dam failure	Event characterized by the sudden, rapid, and uncontrolled release of impounded water due to a breach in the dam.
dead storage	That part of a reservoir that lies beneath the elevation of the bottom of the dam's lowest outlet.
decommissioning	The act of retiring or dismantling a dam.
degradation	The general lowering of the surface of the land by erosive processes, especially by the removal of material through erosion and transportation by flowing water.

delta	The nearly flat alluvial tract of land at the mouth of a river, commonly forming a triangular or fan-shaped plain. Most deltas are partly below water.
demand	The rate at which electric energy is delivered to or by a system, part of a system, or a piece of equipment. It is expressed in kilowatts, kilovoltamperes, or other suitable units at a given instant or averaged over any designated period of time. The primary source of “demand” is the power-consuming equipment of the customers.
design head	The head at which the full gate of the turbine equals the manufacturer-rated generator capacity.
designated	Given formal statutory recognition, as in a federal or state river system.
direct effects	Caused by the action and occur at the same time and place.
discharge	The rate of streamflow at a given instant in terms of volume per unit of time.
dissolved oxygen	The amount of oxygen dissolved in water, in parts per million (PPM) by weight, or in milligrams per liter (mg/l). Perhaps the most commonly employed measurement of water quality. Low DO levels can adversely affect fish and other aquatic life. The total absence of DO will lead to the development of an anaerobic condition with the eventual development of odor and esthetic problems.
diversion	The taking of water from a stream or other body of water into a canal, pipe, reservoir or other conduit.
docket	A formal record of a Federal Energy Regulatory Commission proceeding. Dockets are available for inspection and copying by the public. Dockets for hydroelectric projects can be accessed through the FERC CIPS website.
downstream slope	The slope or face of the dam away from the reservoir water. This slope requires some kind of protection from the erosive effects of rain or surface flow.
drawdown	The lowering of a reservoir’s surface elevation and water volume by releasing (spilling or generating) the reservoir’s water at a rate that is greater than the rate of water flowing into the reservoir.
earthen/earthfill dam	An embankment dam in which more than 50% of the total volume is formed of compacted fine-grained material. A homogeneous earthen dam is constructed of similar earthen material throughout. These are the most common type of dam because their construction involves using materials in the natural state, requiring little processing.

easement	Limited right of ownership of one's land conveyed by deed to another for a special purpose. The legal right to use the land of another for a specific purpose.
ecosystem	The interacting system of a biological community and its geochemical and geophysical environment.
effects	Effects and impacts as used in the CEQ regulations are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.
efficiency	The ratio of useful energy output to total energy input, usually expressed as a percent.
effluent	A liquid discharged as waste from sewage works, storm sewer or from land after irrigation.
electric power system	Physically connected electric generating, transmission, and distribution facilities operated as a unit under one control.
embankment	A linear structure of earth material built to retain water or tailings, or to carry a roadway or railroad.
emergency action plan	Predetermined plan of action to be taken to reduce the potential for property damage and loss of life in an area affected by a dam break or excessive spillway. Required for certain licensed FERC projects.
eminent domain	Governmental power to take private property for a public use, usually government acquisition of land for such purposes as parks, roads, schools, or public buildings; requires payment of just compensation to land owner.
energy	Capacity of a physical system to do work as measured by the capability (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means in order to accomplish tasks.
energy conservation	Efficient use of energy resources. Energy conservation seeks to reduce energy invested per unit of product output, service performed, or benefit received through waste reduction.

environment	The sum of all external conditions and influences affecting the life, development, and, ultimately, the survival of an organism.
ephemeral stream	A stream or portion of a stream which flows briefly in direct response to precipitation in the immediate vicinity and whose channel is at all times above the water table.
epilimnion	The uppermost layer of water in a lake, characterized by an essentially uniform temperature that is generally warmer than elsewhere in the lake and by a relatively uniform mixing caused by wind and wave action.
equal consideration	All values must be given the same level of reflection and thorough evaluation in determining that the project licensed is best adapted. In balancing developmental and non-developmental objectives, the FERC will consider the relative value of the existing power generation, flood control, and other potential developmental objectives in relation to present and future needs for improved water quality, recreation, fish, wildlife, and other aspects of environmental quality.
erosion	The wearing away of soil and rock by weathering, mass wasting, and the action of streams, glaciers, waves, wind, and underground water.
eutrophication	The process whereby a body of water becomes highly productive of aquatic plants, such as algae, due to the input of large quantities of nutrients.
evapotranspiration	That portion of precipitation returned to the atmosphere by a combination of evaporation from the soil and transpiration from plants.
facilitator	An independent third party whose role is to help Participants reach lasting agreement (between as many of the Participants as possible on as many issues as possible). A facilitator helps participants to identify goals, identify issues, develop and maintain critical paths, accomplish creative problem solving, and reach resolution of issues (facilitate and mediate as necessary). A facilitator also helps parties to stay organized and keep track of issues, work group progress, and assignments. The facilitator proposes agendas (for review and input by Participants) and focuses discussions and efforts.
FERC Boundary	The boundary encompassing the project facilities licensed by FERC including any lands required to operate and maintain the project. For the Oroville Facilities that includes the Lake Oroville, Oroville Dam, three power plants (Edward Hyatt Power plant, Thermalito Diversion Dam Power plant, and Thermalito Pumping-Generating Plant), Thermalito Diversion Dam, the Feather River Fish Hatchery and Fish Barrier Dam, Thermalito Power Canal, Thermalito Forebay and Forebay Dam, Oroville Wildlife Area, and the Thermalito Afterbay and Afterbay Dam, as well as a number of recreational facilities. The total acreage within the FERC boundary for the Oroville Facilities is approximately 41,000 acres.



Final Order	A final ruling by the FERC that concludes an action, decides some matter litigated by the parties, operates to divest some right, or completely disposes of the subject matter.
finding of no significant impact	A document by a federal agency briefly presenting the reasons why an action, not otherwise excluded (Section 1508.4), will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it (Section 1501.7(a)(5)). If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference. (CEQ regulations – 40 CFR 1508.13).
fish entrainment	Process by which fish are wounded or killed after being swept in and through a dam's turbines.
fish ladder	A series of ascending pools of running water constructed to enable fish to swim upstream around or over a dam.
fish passage	Features of a dam that enable fish to move around, through, or over a dam without harm. Generally an upstream fish ladder or a downstream bypass system.
flashboards	Temporary structures installed at the crest (top) of dams, gates, or spillways for the purpose of temporarily raising the water surface elevation, and hence the gross head of a hydroelectric generating plant, thus increasing power output. Normally, flashboards are removed either at the end of the water storage season or during periods of high streamflow, or for the purpose of temporarily increasing flood control.
flash flood	A flood that follows within a few hours (usually less than six hours) of heavy or excessive rainfall. A dam or levee failure, or the sudden release of water impounded by an ice jam, is also considered a flash flood.
flood	The inundation of a normally dry area caused by high flow, or overflow of water from an established watercourse (such as a river, stream, or drainage ditch), or ponding of water at or near the point where the rain fell. This is a duration-type event with a slower onset than flash flooding, normally greater than six hours.
flood management	(1) Reducing risk by building dams and/or embankments an/or altering the river channel; (2) Reducing flood risk by actions such as discouraging floodplain development, establishing flood warning systems, protecting urban areas, and allowing the most flood-prone areas to remain as wetlands.
flood stage	Height at which a watercourse overtops its banks. Flood stage is usually higher than or equal to bankfull stage.

floodplain	That portion of a river valley, adjacent to the channel that is built of sediments deposited during flood events that becomes inundated with water when the river overflows its bank at flood stages.
floodway	(1) That portion of a natural floodplain that is regularly inundated during the normal annual flood cycles of a river or stream; (2) A large-capacity channel constructed to divert floodwaters safely through or around populated areas.
flow augmentation	Water released from a storage reservoir to increase river flow, particularly to aid fish migration.
forced outage	The occurrence of a component failure or other condition which requires that a generating unit be removed from service immediately, in contrast to a planned or scheduled outage.
forebay	The impoundment immediately above a dam or hydroelectric plant intake structure from which water is drawn into a tunnel or penstock for delivery to the powerhouse. The term is applicable to all types of hydroelectric developments (storage, run-of-river, and pumped storage).
free-flowing	Nondammed and non-channelized river or stream, as defined by the National Wild and Scenic Rivers Act.
fry	The brief transitional stage of recently hatched fish that spans from absorption of the yolk sac through several weeks of independent feeding.
gas supersaturation	The condition of higher levels of dissolved gases in water due to entrainment, pressure increases, or heating.
gate	A device that is moved across a waterway from an external position to control or stop flow.
generation	The process of producing electric energy by transforming other forms of energy; also, the amount of electric energy produced, usually expressed in kilowatt hours.
generator	A machine that converts mechanical energy into electrical energy.
gross generation	The total amount of electric energy produced by a generating station or stations, measured at the generator terminals.
ground water	That part of the subsurface water that is in the zone of saturation, including underground streams.
habitat	The environment in which the life needs of a plant or animal are supplied.
head	The vertical height of water in a reservoir above the turbine. The more head, the more power that is exerted on the turbine by the force of gravity.

head pond	The reservoir behind a run-of-river dam.
headwaters	Streams at the source of a river.
horsepower	A unit for measuring the rate of work (or power) equivalent to 33,000 foot-pounds per minute or 746 watts.
human environment	Defined by the National Environmental Policy Act regulations to include the natural and physical environment and the relationship of people with that environment.
hydro	Refers to electric power produced by flowing water.
hydroelectric energy	The production of electricity from kinetic energy in flowing water.
hydrograph	A graph showing the water level (stage), flow, velocity, or other characteristics of water with respect to time. A stream hydrograph commonly shows rate of flow; a ground water hydrograph shows water level or head.
hydroelectric plant	A plant in which the turbine generators are driven by falling water.
hydrologic budget	An accounting of the inflow to, outflow from, and storage in, a hydrologic unit (such as a drainage basin, aquifer, soil zone, lake, reservoir, or irrigation project).
hydrologic cycle	The natural pathway water follows as it changes between liquid, solid, and gaseous states.
hydrology	The applied science concerned with the waters of the earth, their occurrences, distribution, and circulation through the unending hydrologic cycle of evaporation, transpiration, precipitation, infiltration, storage, and runoff.
hydropower	The harnessing of flowing water to produce mechanical or electrical energy.
hypolimnion	The lowermost layer of water in a lake, typically characterized by an essentially uniform temperature generally colder than elsewhere in the lake and often by relatively stagnant or oxygen-poor water.
Impact Analysis for Planning	A computer-driven input/output model originally developed by the United State Forest Service in cooperation with the Federal Emergency Management Agency and the Bureau of Land Management to assist the USFS in land and resource management planning.
impoundment	A body of water such as a pond, formed by a dam, dike, floodgate or other barrier.

indirect effects	Effects that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.
initial license	The first license issued for a water power project under either the Federal Water Power Act of 1920 or the Federal Power Act of 1935.
instream flow	The water flowing in a riverbed, which excludes water diverted from the river for human use.
instream right	A water right in which water is kept in a stream and not removed and for which the legally required "beneficial use" is identified as fish and wildlife, riparian habitat, recreation, or some related protection.
instream use	The use of water that does not require withdrawal or diversion from its natural watercourse; for example, the use of water for navigation, recreation, and support of fish and wildlife.
intake	The entrance to a conduit through a dam or a water facility.
interruptible demands	Those demands that, by contract, can be interrupted in the event of a capacity deficiency on the supplying system.
intervenor	A person, institution or organization admitted as a participant to a proceeding.
inundation map	A map that delineates the areas that would be flooded by particular flood events.
irrigation	The controlled application of water to arable lands to supply water requirements not satisfied by rainfall.
just compensation	Payment for the full value of land or other property taken for public use by the government.
kilowatt	A unit of power equal to 1,000 watts or 1.3414 horsepower. It is a measure of electrical power or heat flow rate and equals 3,413 Btu per hour. An electric motor rated at one horsepower uses electric energy at a rate of about three-quarters kilowatt.
levee	An artificial embankment built along a watercourse to protect land from flooding. If built of concrete or masonry the structure is referred to as a floodwall. Levees and floodwalls confine streamflow within a specified area to prevent flooding.
license	Authorization by the FERC to construct, operate, and maintain nonfederal hydro projects for a period up to 50 years.

licensee	Any person, State, or municipality licensed under the provisions of section 4 of this Act, and any assignee or successor in interest thereof (Federal Power Act, Sec. 3 (5)). The Department of Water Resources (DWR) is the licensee for Oroville Facilities FERC Project 2100. A licensee takes the lead in developing necessary information and preparing formal documents related to a project.
littoral zone	Pertaining to the benthic environment or depth zone between high water and low water.
live storage	That part of a reservoir that lies above the elevation of the bottom of the dam's lowest outlet.
load	The amount of electric power or gas delivered or required at any point on a system. Load originates primarily at the energy consuming equipment of the customers.
load factor	The ratio of average load to peak load for a specified period, usually expressed as a percentage.
losing stream	A stream reach in which the water table adjacent to the stream is lower than the water surface in the stream, causing infiltration from the stream channel, recharging the groundwater aquifer and decreasing the stream flow.
mainstem	The principal river in a basin, as opposed to the tributary streams and smaller rivers that feed into it.
maintenance expenses	That portion of operating expenses consisting of labor, materials, and other direct and indirect expenses incurred for preserving the operating efficiency or physical condition of utility plants which are used for power production, transmission and distribution of energy.
maintenance outage	The removal of a unit from service to perform work on specific components which could have been postponed past the next weekend.
major hydro project	Those projects with a capacity greater than 1.5 MW.
mandatory conditions	Refers to the specific legal authority of resource agencies to impose conditions on a FERC-licensed project.
megawatt	A unit of electrical power equal to one million watts or one thousand kilowatts.
metalimnion	The horizontal layer of a thermally stratified lake in which the temperature decreases rapidly with depth. The metalimnion lies between epilimnion and the hypolimnion and includes the thermocline.
mill	A monetary cost and billing unit used by utilities; it is equal to 1/1000 of the U.S. dollar (equivalent to 1/10 of one cent).

minimum flow	The minimum river flow required to sustain aquatic life. Often required at a hydroelectric dam as a condition of the dam owner's operating license.
mitigation	To make or become less intense or severe.
mitigation measures	Measures or activities designed to address specific resource impacts and where possible, should eliminate or minimize those impacts.
multi-purpose dam	A barrier constructed for two or more purposes such as storage, flood control, navigation, power generation, or recreation.
multi-purpose reservoir	A reservoir that can be used for more than one purpose, such as flood control, hydroelectric power development, recreation, etc.
navigable waters	Those parts of streams or other bodies of water over which Congress has jurisdiction under its authority to regulate commerce with foreign nations and among the several States, and which either in their natural or improved condition notwithstanding interruptions between the navigable parts of such streams or waters by falls, shallows, or rapids compelling land carriage, are used or suitable for use for the transportation of persons or property in interstate or foreign commerce, including therein all such interrupting falls, shallows, or rapids, together with such other parts of streams as shall have been authorized by Congress for improvement by the United States or shall have been recommended to Congress for such improvement after investigation under its authority.
new license	Any license, except an annual license issued under section 15 of the Federal Power Act, for a water power project that is issued under the Federal Power Act after the initial license for that project.
nondegradation	A term in the Clean Water Act that indicates a standard of water quality for which certain water bodies are to be managed so as to prevent any degradation.
nongovernmental organization	Designation used to identify nationally or locally recognized nonprofit organizations typically dedicated to environmental conservation, protection and/or enhancement activities. Examples of NGO's include: The Sierra Club, The Audubon Society, Trout Unlimited, and Environmental Defense, among others.
nonpoint source pollution	A term in the Clean Water Act also called "polluted runoff," water pollution produced by diffuse land-use activities. Occurs when runoff carries fertilizer, animal wastes, and other pollution into rivers, streams, lakes, reservoirs, and other bodies of water.
nutrients	Animal, vegetable, or mineral substance that nourishes individual organisms and ecosystems.

off-peak energy	Electric energy supplied during periods of relatively low system demands.
on-peak energy	Electric energy supplied during periods of relatively high system demands.
original cost	The cost of the property at the time it was first placed in public service.
Oroville Facilities	The Oroville Facilities include Lake Oroville (the States second largest reservoir), Oroville Dam, three power plants (Edward Hyatt Power plant, Thermalito Diversion Dam Power plant, Thermalito Pumping-Generating Plant), Thermalito Diversion Dam, the Fish Barrier Dam, the Feather River Fish Hatchery, Thermalito Power Canal, Thermalito Forebay, and the Thermalito Afterbay.
outage	<p>The period during which a generating unit, transmission line, or other facility is out of service.</p> <ul style="list-style-type: none"> <li>• Forced outage - the shutdown of a generating unit, transmission line or other facility, for emergency or other non-intentional reasons.</li> <li>• Scheduled outage - the shutdown of a generating unit, transmission line, or other facility, for inspection or maintenance, in accordance with an advance schedule.</li> </ul>
overdraft	Pumping of groundwater for consumptive use in excess of safe yield.
peak load	The maximum demand for electrical power that determines the generating capacity required by a public utility.
peaking operation	A hydropower project operation that utilizes the generating equipment and reservoir impoundment capacity to store water and then provide power during daily, weekly, or seasonal periods of peak power demand.
penstock	A pipe used to convey water under pressure to the turbines of a hydroelectric plant.
perennial stream	A stream that flows throughout the year.
permeability	The capacity of a porous rock, sediment, or soil for transmitting a fluid; it is a measure of the relative ease of fluid flow under unequal pressure.
point source pollution	Pollution into bodies of water from specific discharge points such as sewer outfalls or industrial-waste pipes.
potable water	Water of a quality suitable for drinking.
power	The rate at which work is done. The rate at which energy is transferred. The watt is a typical unit of power measured in units of work per unit of time.

powerhouse	A structure at a hydroelectric power site that contains the turbine and generator.
pre-filing consultation process	Includes activities performed in order to address FERC and other statutory and regulatory requirements in preparing the Applications for New License for the Projects. The pre-filing period continues up the act of formally filing the Applications with the FERC.
Probable Maximum Flood	The largest flood considered reasonably possible at a site as a result of meteorological and hydrological conditions.
production (electric)	Act or process of producing electrical energy from other forms of energy; also, the amount of electrical energy produced expressed in kWh.
production expenses	Costs incurred in the production of electric power and conforming to the accounting requirements of the Operation and Maintenance Expense Accounts of the FERC Uniform System of Accounts.
Project	Oroville Facilities.
public lands	Such lands and interest in lands owned by the United States, as are subject to private appropriation and disposal under public land laws. It shall not include "reservations," as hereinafter defined (Federal Power Act, Sec. 3(1)) public review file Constitutes the formal written record of the pre-filing consultation process. Files are maintained at the Department of Water Resources in Sacramento and the Oroville Public Library (See Communications Protocol).
Public Trust Doctrine	A legal, court-developed doctrine by which a state can hold and manage certain State-owned lands (including water in streams and the lands underlying navigable waters) in trust for the citizens of that state.
ramp rate	The maximum allowable rate of change in output from a power plant. The ramp rate is established to prevent undesirable effects due to rapid changes in loading or, in the case of hydroelectric plants, discharge.
ramping	The act of increasing or decreasing stream flows from a powerhouse, dam or diversion structure.
rating	A manufacturer's guaranteed performance of a machine, transmission line, etc., based on design features and test data. The rating will specify such limits and load voltage, temperature, frequency, etc. The rating is generally printed on a nameplate attached to equipment and is commonly referred to as the nameplate rating, nameplate capacity, etc. (FERC)
reach	The distance between two specific points delineating a portion of a stream or river.



recharge	To add water to an aquifer; also, the water added to an aquifer.
recreation visit	A visit by one person to a recreation area for any portion of a single day.
regulated river	A river for which the natural flow pattern is altered by a dam or dams.
reliability	The probability that a device will function without failure over a specified time period or amount of usage.
Relicensing	The administrative proceeding in which FERC, in consultation with other federal and State agencies, decides whether and on what terms to issue a new license for an existing hydroelectric project at the expiration of the original license.
reservation	Means national forest, tribal lands embraced within Indian reservations, military reservations, and other lands and interests in lands owned by the United States, and withdrawn, reserved, or withheld from private appropriation and disposal under the public land laws; also lands and interests in lands acquired and held for any public purposes; but shall not include national monuments or national parks.
reservoir	A pond, lake, tank or basin, natural or man-made, used for the storage, regulation and control of water.
Resource Agency	A federal, State, or interstate agency exercising administration over the areas of flood control, navigation, irrigation, recreation, fish and wildlife, water resource management (including water rights), or cultural or other relevant resources of the State or States in which a project is or will be located. (FERC regulations - 18 CFR 4.30(b)(27).
riffle	An expanse of shallow bottom extending across a stream bed, over which the water flows swiftly with a wavy surface owing to submerged obstructions.
riparian	Pertaining to or situated on the bank of a body of water, especially of a river.
riparian habitat	The habitat found on or along stream banks and river banks.
river	A natural stream of water emptying into an ocean, lake, or another river.
river basin	The entire area drained by a river and its tributaries.
river mouth	Point where a river ends by flowing into another body of water such as a lake, ocean, or another river.
rulemaking	The authority delegated to administrative agencies by the Congress to make rules that have the force of law. Frequently, statutory laws passed by Congress express broad terms of a policy and are implemented more specifically by administrative rules, regulations, and practices.

run-of-river	A hydropower project that uses the flow of a stream with little or no reservoir capacity for storing water.
runner	The rotating part of a turbine.
runoff	Water in excess of that which can be absorbed by the ground and which runs off the land into streams, rivers, or lakes.
safe yield	The rate of surface water diversion or groundwater extraction from a basin for consumptive use over an indefinite period of time that can be maintained without producing negative effects.
salinization	The accumulation of salt in soil or water to a harmful level.
saltation	Sediment transport in which particles are moved forward in a series of short leaps or bounces, e.g. sand grains bounding downstream in a current not turbulent enough to retain them in suspension.
sand	A detrital particle smaller than a granule and larger than a silt grain, having a diameter in the range of 1/16 to 2 mm.
scenic river	Defined in the National Wild and Scenic Rivers Act as "those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads."
scoping	An early and open public process that is part of the NEPA and California Environmental Quality Act process for determining the issues to be addressed and identifying significant issues, and needed analysis related to a proposed action. Scoping invites participation by government agencies, tribes and other interested parties, identifying issues to be analyzed in depth, eliminating issues which are not significant, identifying other environmental review or consultation requirements, and identifying timing of environmental review, planning and decision-making.
scour	Concentrated erosive action, especially by stream water, as on the outside curve of a bend; also, a place in a stream bed swept clear by a swift current.
screen analysis	Determination of the particle-size distribution of a soil or sediment by measuring the percentage of the particles that will pass through standard screens of various sizes.
sediment	Solid fragmental material that is transported and deposited by water, wind or ice, chemically precipitated from solution, or secreted by organisms that form in layers in loose unconsolidated form, e.g. sand, mud, till.
sediment flushing	A method of reservoir operation in which the reservoir is temporarily lowered so that fast-flowing water can erode accumulated sediments on the reservoir bed.

sediment load	The solid material transported by a stream, expressed as the dry weight of all sediment that passes a given point in a given period of time.
sediment sluicing	A method of reservoir operation in which the reservoir is lowered at the start of the flood season, speeding the movement of water through the reservoir and hence reducing its capacity to trap sediment.
selective withdrawal structures	Devices that permit releases from a reservoir over a wide range of depths, temperatures, or water quality.
Settlement Agreement	A formal agreement that states agreed-to provisions, in this case for a new FERC license. FERC encourages Applicants to prepare and file Settlement Agreements. Most measures in Settlement Agreements are included in license Articles; however, FERC cannot include measures that are in conflict with the Federal Power Act or other federal statutes or beyond its regulatory jurisdiction.
sere	A sequence of ecologic communities that succeed one another in development from pioneer stage to climax community.
service list	In FERC terms, this is the official list of parties to a proceeding once a formal filing has been made.
silt	A detrital particle finer than fine sand and coarser than clay, commonly in the range of 1/16 to 1/256 mm.
sluice	A structure with a gate for stopping or regulating flow of water.
smolt	A juvenile salmon or steelhead migrating to the ocean and undergoing physiological changes to adapt its body from a freshwater to a saltwater environment.
spawning	The releasing and fertilizing of eggs by fish.
Special Status Species	Species or subspecies listed under the Federal Endangered Species Act or the California Endangered Species Act as endangered or threatened, or by a federal or State Agency as a species of special concern, sensitive species, fully protected species or management indicator species.
spill	Water passed over a dam without going through turbines to produce electricity. Spill can be forced, when there is no storage capability and flows exceed turbine capacity, or planned, for example, when water is spilled to enhance juvenile fish passage.
spillway	A structure over or through which excess or flood flows are discharged. If gates control the flow, it is a controlled spillway, if the elevation of the spillway crest is the only control, it is an uncontrolled spillway.

spinning reserves	The unused capacity in an electric system in generator units that are not in operation but can be called upon for immediate use in case of system problems or sudden load changes.
standby reserves	The unused capacity in an electric system in machines that are not in operation but that are available for immediate use if required.
State Water Project	One of the largest multipurpose water and hydroelectric projects in the nation. Since its construction in the 1960s and 1970s, the SWP has helped fuel California's economic growth, transporting more than 57 million acre-feet of water for use in homes, factories, businesses, and farm throughout the State. The Oroville Facilities are part of the SWP.
storage reservoir	Reservoir that has space for retaining water - from springtime snowmelts, for example. Retained water is released as necessary for various uses, including power production, fish passage, irrigation, and navigation.
stratification	Thermal layering of water in lakes and streams.
stream adjudication	A judicial or administrative process to determine the extent and priority of the rights of all persons to use water in a river system.
stream bed	The channel or bottom of a river or stream.
stream gaging	Measurement of the velocity of a stream of water in a channel or open conduit and of the cross-sectional area of the water, in order to determine discharge.
stream load	All the material that is transported by a stream, either as visible sediment or in solution.
stream reach	A specific portion of the length of a stream.
streamflow	The rate at which water passes a given point in a stream, usually expressed in cubic feet per second (cfs). This term is often used interchangeably with discharge.
storage plant	A hydroelectric plant that has reservoir storage capacity for power use.
substation	An assemblage of equipment for the purposes of switching and/or changing or regulating the voltage of electricity.
tailrace	Channel through which water is discharged from the powerhouse turbines.
tailwater	The area of river below and directly influenced by the water discharged from a hydroelectric generator.
thermocline	The plane in a thermally stratified lake located at the depth where temperature decreases most rapidly with depth.

threatened species	Any species which has the potential of becoming endangered in the near future.
transmission	The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.
transpiration	The process by which water absorbed by plants is evaporated into the atmosphere from the plant surface.
trash rack	A mechanism found on a dam or intake structure that clears the water of debris before the water passes through the structure.
tributary	Any stream that contributes water to another stream.
turbidity	A measure of the extent to which water is stirred up or disturbed, as by sediment; opaqueness due to suspended sediment.
turbine	A machine in which the kinetic energy of a moving fluid is converted to mechanical power by the reaction of the fluid with a series of buckets, paddles, or blades fitted around the circumference of a wheel or cylinder.
underflow	The movement of groundwater beneath the bed of a stream.
vadose zone	The unsaturated zone lying between the earth's surface and the top of the groundwater.
water quality	The condition of water as determined by measurements of such factors as suspended solids, acidity, turbidity, dissolved oxygen, and temperature and by the presence of organic matter and/or chemical compounds.
water quality criteria	The levels of pollutants that affect the suitability of water for a given use. Generally, water use classification includes: public water supply; recreation; propagation of fish and other aquatic life; agricultural use and industrial use.
water quality standard	A plan for water quality management containing four major elements: the use (recreation, drinking water, fish and wildlife propagation, industrial or agricultural) to be made of the water; criteria to protect those uses; implementation plans (for needed industrial-municipal waste treatment improvements) and enforcement plans, and an anti-degradation statement to protect existing high quality waters.
water rights	Priority claims to water. A legal right to use a specific amount of water from a natural or artificial body of surface water for general or specific purposes such as irrigation, mining, power, domestic use, or instream flow.

watercourse	A natural, well-defined channel produced wholly or in part by a definite flow of water, continuous or intermittent.
watershed	All the land drained by a given river and its tributaries. An entire drainage basin including all living and nonliving components of the system.
water table	The surface between the zone of saturation and the (vadose) zone of aeration; that surface of a body of unconfined ground water at which the pressure is equal to that of the atmosphere.
water year	The 12-month period for which the United States Geological Survey reports surface water supplies. Water years begin October 1 and end the following September 30, and are designated by the calendar year in which the water year ends.
watt	The electrical unit of power.
wetlands	Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (US Army Corps of Engineers and US Environmental Protection Agency definition). Wetlands must have the following three attributes: (1) at least periodically, the land supports predominately hydrophytes; (2) the substrate is predominately un-drained, hydric soil; and (3) the substrate is on soil and is saturated with water or covered by shallow water at some time during the growing season of each year.
wild river	Defined in the National Wild and Scenic Rivers Act as "those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and water unpolluted. These represent vestiges of primitive America."
Young Adult Ratio	The ratio of young adult fish to juvenile fish; can be used as an indicator of juvenile recruitment to the reservoir.

# Oroville Facilities Relicensing FERC Project No. 2100

## ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act	DFG	California Department of Fish and Game
af	acre-feet	DO	Dissolved oxygen
AFRP	Anadromous Fish Restoration Program	DPR	California Department of Parks and Recreation
AGC	Automatic Generation Control	DWR	California Department of Water Resources
ALP	Alternative Licensing Procedures	EA	Environmental Assessment
APE	Areas of Potential Effects	EAP	Emergency Action Plan
APEA	Applicant Prepared Environmental Assessment	ECPA	Electric Consumers Protection Act
BCDA	Butte County Department of Agriculture	EIR	Environmental Impact Report
BLM	US Bureau of Land Management	EIS	Environmental Impact Statement
BMP	Best Management Practices	FACHP	Federal Advisory Council on Historic Preservation
BOD	Biological oxygen demand	FEA	Final Environmental Assessment
Btu	British Thermal Unit	FEMA	Federal Emergency Management Agency
BWMA	Butte County Weed Management Area	FERC	Federal Energy Regulatory Commission
CALSIM	California Simulation	FESA	Federal Endangered Species Act
CDF	California Department of Forestry and Fire Protection	FONSI	Finding of No Significant Impact
CEPPC	California Exotic Pest/Plant Council	FPA	Federal Power Act
CEQA	California Environmental Quality Act	FRH	Feather River Hatchery
CEQ	Council on Environmental Quality	FRRPD	Feather River Recreation and Park District
CESA	California Endangered Species Act	GIS	Geographic Information System
CFR	Code of Federal Regulations	GPS	Global Positioning System
cfs	cubic feet per second	HSC	Habitat Suitability Criteria
CNDDB	California Natural Diversity Data Base	HSI	Habitat Suitability Indices
CNPS	California Native Plant Society	IFIM	Instream Flow Incremental Methodology
CRHR	California Register of Historical Places	IIP	Initial Information Package
CSU	California State University	KOP	Key Observation Points
CVWQCB	Central Valley Water Quality Control Board	kW	kilowatt
CWA	Clean Water Act	kWh	kilowatt hour
CWHR	California Wildlife Habitat Relationships Database	lfc	low flow channel
DBW	California Department of Boating and Waterways	LOJPA	Lake Oroville Joint Powers Authority
DEA	Draft Environmental Assessment	LOSRA	Lake Oroville State Recreation Area
DEIR	Draft Environmental Impact Report	LRMP	Plumas National Forest's Land and Resource Management Plan
DFA	California Department of Food and Agriculture	MAC	Maidu Advisory Council
		maf	million acre-feet
		MTBE	methyl tertiary-butyl ether

msl	mean sea level	USACE	US Army Corps of Engineers
MW	megawatt	USBR	US Bureau of Reclamation
MWh	megawatt hour	USEPA	US Environmental Protection Agency
NAHC	Native American Heritage Commission	USFS	US Forest Service
NEPA	National Environmental Policy Act	USFWS	US Fish and Wildlife Service
NF	North Fork	USGS	US Geological Survey
NGO	Nongovernmental Organization	VELB	Valley Elderberry Longhorn Beetle
NHPA	National Historic Preservation Act	WCB	Wildlife Conservation Board
NMFS	National Marine Fisheries Service	WUA	Weighted Usable Area
NOP	Notice of Preparation		
NPS	National Park Service		
NRHP	National Register of Historic Places		
NRPA	National Recreation and Park Association		
O&M	Operations and Maintenance		
OFR	Oroville Facilities Relicensing		
ORAC	Oroville Recreation Advisory Committee		
OWA	Oroville Wildlife Area		
PDEA	Preliminary Draft Environmental Assessment		
PG&E	Pacific Gas and Electric Company		
PHABSIM	Physical Habitat Simulation		
PM&E	Protection, Mitigation and Enhancement		
PMF	Probable Maximum Flood		
PNF	Plumas National Forest		
QA/QC	Quality Assurance/Quality Control		
RRMP	US Bureau of Land Management's Redding Resource Management Plan		
RV	recreational vehicle		
RWQCB	Regional Water Quality Control Board		
SCORP	State Comprehensive Outdoor Recreation Plan		
SD	Scoping Document		
SD1	Scoping Document 1		
SD2	Scoping Document 2		
SHPO	State Historic Preservation Office		
SOBA	State Organization for Boating Access		
SWP	State Water Project		
SWRCB	State Water Resources Control Board		
taf	thousand acre-feet		
TCP	traditional cultural properties		
TES	Threatened and Endangered Species mapping		
UC	University of California		